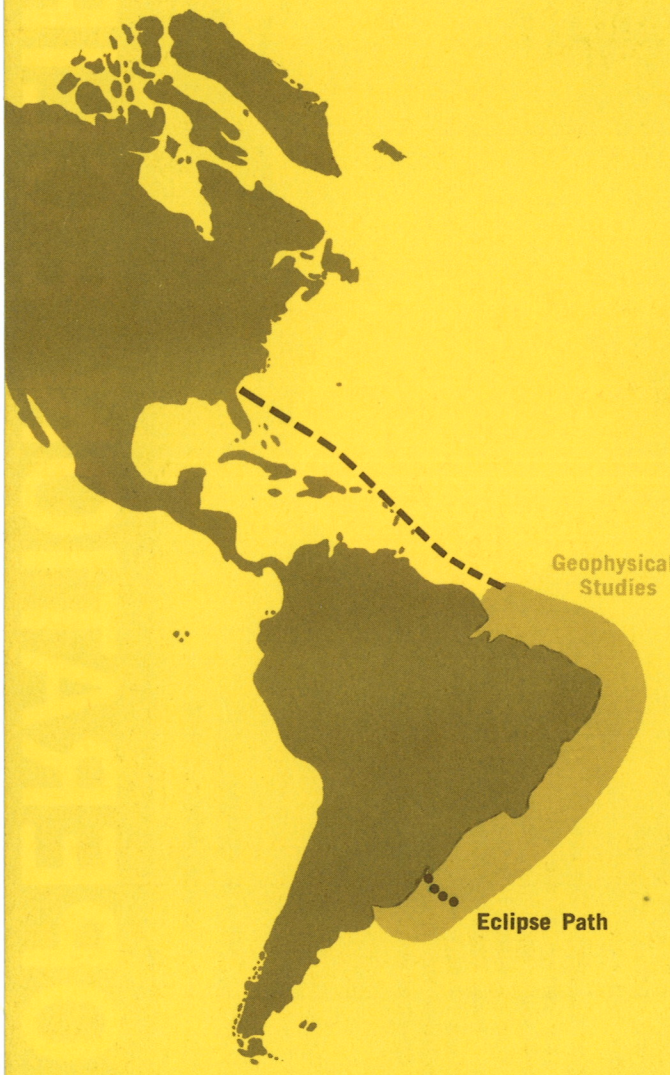
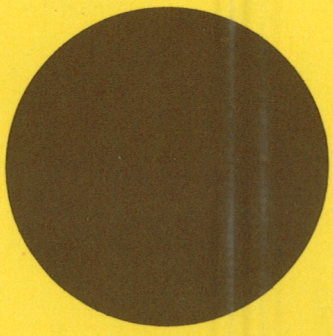
Oceanographic Track
Operation Eclipse





ESSA/ PI 660020

July 1966

Early in October 1966, the USC&GSS OCEANOGRAPHER will sail from Jacksonville, Fla., to participate in OPERATION ECLIPSE....observation of the November 12, 1966 total solar eclipse from a South Atlantic noon point. The OPERATION ECLIPSE expedition promises to be a study in interdisciplinary research, combining en route geophysical investigations with on station eclipse observations.

CONTINENTAL DRIFT INVESTIGATION. En route to and from the South Atlantic noon point of the November 12 eclipse, **Oceanographer** will conduct geophysical measurements in support of the Institute for Oceanography's continental drift study. The objectives of this investigation will be the development of precise bathymetry along the continental slope off Brazil and Uruguay, and determination of the type and extent of shelf and slope modification caused by faulting or subsidence since the proposed initial drifting of the South American and African continents. Sediment cores and geological dredge samples will be obtained, and seismic reflection profiles will be run, in selected areas. Trackline measurements will include magnetic field, gravity, and water depth.

OPERATION ECLIPSE. Preparations for this portion of the expedition will begin when the ship stops at Buenos Aires, in early November. There, **Oceanographer** will be joined by personnel from ESSA's Institute for Telecommunications Sciences and Aeronomy, and will take aboard special optical and electronic equipment needed for the observations. Two days before the eclipse, the ship will sail from Buenos Aires and, on November 12, take up a position along the path of totality described below:

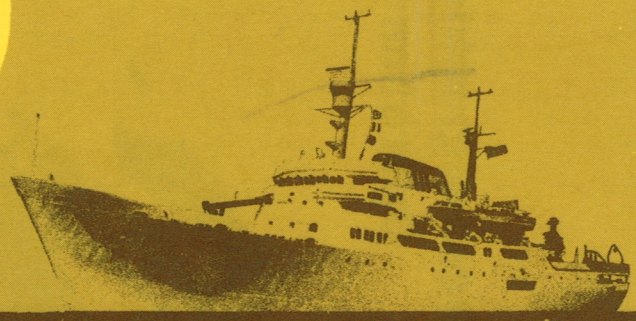
Time (GMT)		Latitude (South)		Longitude (West)	
h	m	°	′	°	′
14	10	32	24.5	52	49.1
14	15	33	38.2	51	10.6
14	20	34	49.9	49	29.4
14	25	35	59.6	47	44.8

Oceanographer will commence observations approximately 90 minutes before the eclipse, and will continue for approximately 90 minutes after totality.

OSS 01—GENERAL DESCRIPTION. At 3800 tons and an overall length of 303 feet, **Oceanographer** is the largest research ship built by the United States. Her range is 13,000 nautical miles at a sustained speed of 16 knots, and she carries up to 150 days' provisions. The ship's steel hull is ice-strengthened for polar operations.

Oceanographer combines a complete oceanographic research capability with certain unique features of design. Automation of engine room controls uses a shipboard computer located in the oceanographic laboratory. The computer is available for processing oceanographic and meteorological data. Sounding equipment includes a vertically stabilized narrow-beam transducer system, and combination horizontal/vertical sonar, as well as conventional echo-sounding gear. Loran A and Loran C systems and satellite navigation equipment provide a high degree of position-fixing accuracy. Communications equipment is replete, and includes an APT (Automatic Picture Transmission) receiver to read out ESSA weather satellite photographs.

OCEANOGRAPHY AT ESSA. The oceanographic phases of ESSA's program are conducted by the Coast and Geodetic Survey and the Institute for Oceanography. The Coast Survey is principally responsible for the operation and maintenance of ESSA's research fleet and facilities and for oceanographic services. The institute for Oceanography conducts ESSA's oceanographic research programs.



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Environmental Science Services Administration

OPERATION ECLIPSE